https://doi.org/10.29309/TPMJ/2022.29.07.6751

The Professional Medical Journal
www.theprofesional.com
2022, Volume, 29 Issue, 07

ORIGINAL ARTICLE

Assessment of clinico-pathological and radiological features of oral squamous cell carcinoma cases from CMH Kharian Pakistan.

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Article Citation: Balooch S, Iqbal W, Majid A, Ahmed A, Chang AH, Yousfani J. Assessment of clinico-pathological and radiological features of oral squamous cell carcinoma cases from CMH Kharian Pakistan. Professional Med J 2022; 29(7):1051-1055. https://doi.org/10.29309/TPMJ/2022.29.07.6751

ABSTRACT… Objectives: To assess role of clinico-demographic, histopathological staging and radiological evaluations timely diagnosis of oral squamous cell carcinomas. **Study Design:** Cross Sectional Descriptive Study. **Setting:** Out Patient Department (OPD), Combined Military Hospital Kharian, Gujrat Pakistan. **Period:** July 2019 to June 2020. **Material & Methods:** The demographics of patients were recorded. CAP protocol from the biopsy and CT scan reports were used to interpret stage and grade of oral cancer. The data was analyzed by using SPSS 16. The variables were presented through frequencies and percentages. **Results:** In current study 47 cases of oral squamous cell carcinomas including 30(63.83%) males and 17(36.17%) females were included. The mean age of the patients was 49.2 years ± 3.2 SD. Upon clinico-pathological evaluations, we found that, about 21 (44.68%) cases of OSCCs were affecting buccal mucosa, 8 cases (17%) tongue, 14% retro molar and 4% lip carcinomas respectively. Upon radiological staging 34% cases were from stage I and Stage II OSCCs. Whereas only 23% and 8% cases from belonging from stage III and Stage IV. **Conclusion:** Current study concludes that, clinical evaluation of OSCCs in parallel with radiological and histopathological evaluations is the key strategy to achieve precise diagnosis of OSCCs on time.

Key words: Grades of OSCC, Oral Squamous Cell Carcinoma, Stages of OSCC, Tobacco.

INTRODUCTION

The cellular alteration in epithelial lining of the squamous cells of the oral cavity is considered the most prevalent type of neoplasm worldwide. Major anatomical changes within epithelial cells may include, cellular atypia up to cellular dysplasia. The continuous interaction of causative agents with epithelial cells results in progression of cellular dysplasia into metastasis.[1] Recent research reports ranked oral cavity malignancies the eighth most common cause of the deaths globally. Whereas a significant rise in annual cases (>300,000 cases) of the oral cavity cancers were noticed worldwide.[3] Developed countries have made significant preventive and therapeutic interventions to achieve static mortality rates of oral cavity led carcinomas. In middle income countries, like Pakistan still higher incidence of oral cancers persist due to raw tobacco consumption, socio-factors cultural and lifestyle influence on tumorigenesis.[2,4,5] The histopathological characterization of oral carcinoma suggests that about 90-95% cases of belongs to squamous cell carcinomas, and further classified into well-differentiated, poorly differentiated and undifferentiated squamous cell carcinomas.[7,8] Uncontrolled tumor progression, metastasis and rise in recurrence chances of oral squamous cell carcinomas are the key challenges for healthcare physicians to intervene OSCC associated mortalities in under developed settings.[9,10]

In depth literature exploration at local level, few studies reported clinical and surgical aspects of oral carcinomas. Whereas some studies focused on histopathological and epidemiological status of the oral carcinomas cases. Therefore,

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Article received on: 17/08/2021
Accepted for publication: 21/10/2021

assessment of clinico-demographic, histopathological staging and radiological evaluations are considered paramount for timely diagnosis of oral carcinomas.[11-15]

MATERIAL & METHODS

Current one year (July 2019 to June 2020) cross-sectional descriptive study following convenient sampling approach was conducted at Out Patient Department (OPD), Combined Military Hospital Kharian, Gujrat Pakistan. Patients from both genders presenting oral squamous cell carcinoma, above 20-year of age, and willing to participate in the study were included in the study. The study excluded patients who were unwilling to participate in the study and the ones diagnosed with other types of cancer. The study was approved from the Ethics Review Committe Combined Military Hospital Kharian and patient informed consent was taken for participation in the study.

The clinical demographics of the patients including age, gender, ethnicity, socioeconomic status, detailed history of various types of tobacco used, oral hygiene habits, and cancer family history were recorded on a predesigned questionnaire. In next phase radiological assessment of individual tumor was made for radiological staging. Further, patient biopsies were processed for histopathological evaluations. Grading of OSCC was done into well-differentiated (normal squamous epithelium closely resembled), moderately differentiated OSCC (composed of nuclear pleomorphism, atypical and less keratinized mitosis), and poorly differentiated (composed of immature cells, typical or atypical mitosis with very negligible and infrequently keratinized necrosis). The criteria for the staging of oral cavity cancer was adopted from American Joint Committee on Cancer.[13] Data was analyzed by using SPSS 2. The categorical variables including age, oral sub-site, gender, habit profile, and histological grading were presented through frequencies and percentages.

RESULTS

In current study 47 cases of oral squamous cell carcinomas including 30(63.83%) males and 17(36.17%) females were included. The mean age of the patients was 49.2 years ± 3.2 SD. Patients from age ranges 21 up to > 50 year of age were included. The highest number of cases (68%) were from age group 31-40-year age group. While minimum cases (6.38%) of OSCCs were belonging from ≥ 50-year age (Table-I). Upon clinico-pathological evaluations, we found that, about 21 (44.68 %) cases of OSCCs were affecting buccal mucosa, 8 cases (17%) tongue, 14% retro molar and 4% lip carcinomas respectively (Table-I). Upon radiological staging 34% cases were from stage I and Stage II OSCCs. Whereas only 23% and 8% cases from belonging from stage III and Stage IV.

Based on tobacco use we found that, 53% patients were using gutka, paan (23.4%), betel nuts, naswar (8.5%) respectively (Table-I). Based on ethnic values highest cases of OSCCs Urdu speakers (68%), 21.28% were Sindhi and lowest cases of OSCCs (4%) were Punjabi speakers. Upon histopathological characterization 89.36% patients were the cases of well differentiated OSCCs, 10.6% moderately differentiated OSCCs and there was no case of poorly differentiated OSCCs recorded during the study.

DISCUSSION

Cancer is considered as an important health issue worldwide. Although it has many forms depending upon its location, all its types are now under investigation by the researchers. The reason for this interest is the rising prevalence of the disease in the modern age. The present study is an effort towards understanding the clinical profiles of OSCCs cases and importance of diagnostic methods. The oral cancer varies widely with respect to different geographic areas, due to differences in lifestyles, culture and developmental status.[14] Out of the 145,000 deaths reported due to oral cancer, about 77% were reported from less developed countries.[15] Approximately 30,000 new oral cancer cases are identified annually and most of them are in critical stage III or IV.[4]

Gender	Well Differentiated OSCC	Moderately Differentiated OSCC	Total	%age	Chi-Square	P-Value
Male	27	3	30	63.83	0.04	0.85
Female	15	2	17	36.17		
Age groups						
21-30	9	1	10	21.28	5.54	0.14
31-40	30	2	32	68.09		
40-50	1	1	2	4.26		
>50	2	1	3	6.38		
Mean Age = 49.2 years ± 3.2 SD						
Sub-Sites of OSCC						
Buccal Muscosa	19	2	21	44.68	0.28	0.96
Tongue	7	1	8	17.02		
Retro Molar	6	1	7	14.89		
Alveolar	5	1	6	12.77		
Palate	3	0	3	6.38		
Lip	2	0	2	4.26		
Radiological Staging						
Stage 1	15	1	16	34.04	1.28	0.73
Stage 2	14	2	16	34.04		
Stage 3	10	1	11	23.40		
Stage 4	3	1	4	8.51		
Tobacco Usage						
Gutka	24	1	25	53.19	4.55	0.34
Pan	10	1	11	23.40		
Betel nuts	3	1	4	8.51		
Smoking	2	1	3	6.38		
Naswar	3	1	4	8.51		
Ethinicity						
Pukhtoon	2	1	3	6.38	5.53	0.13
Punjabi	1	1	2	4.26		
Sindhi	9	1	10	21.28		
Urdu Speaking	30	2	32	68.09		

Table-I. Clinico-pathological and radiological demographics of OSCCs.

Based on gender association we found that, males are more affected rather than females, The P-value <0.05 was considered statistically significant. Intriguingly, we found insignificant association (P-value=0.85) among well differentiated and moderately differentiated oral squamous cell carcinomas. The possible reason for insignificant gender differences may include, higher adaptation of cancer habits among males.[14] Similarly, we found insignificant (P-Value=0.14) age association with differentiation of oral squamous cell carcinomas. Our outcomes report that, the age group 31-40 year was commonly affected as consistent with a recent study led by Kak, et al 2021.[15] Another study focusing age association declared that patients from age group 41-60 year are more affected with malignant neoplasms of OSCCs. Our study revealed buccal mucosa the most common affected site followed by tongue as similar reported by a Modi et al. The major reason for matching outcomes may include higher use of tobacco (Gutka) history.[16]

CONCLUSION

Current study concludes that, clinical evaluation of OSCCs in parallel with radiological and histopathological evaluations is the key strategy to achieve precise diagnosis of OSCCs on time. Our study seems equal important for oral pathology experts and radiologists to achieve diagnostic success of OSCCs at large. Whereas current study also educates common public to

avoid tobacco use and its related consequences.

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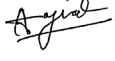
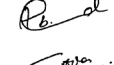
2	Waqas Iqbal	Patient acquisition, Clinical diagnosis and Histopathological analysis.	
3	Abdul Majid	Lab experiments, Quality assessment and Histopathological analysis.	
4	Arsalan Ahmed	Data compilation literature search, Manuscript drafting.	
5	Abid Hussain Chang	Histopathological analysis & evaluations.	
6	Jaweria Yousfani	Patient monitoring, Methodology, Study design, Results.